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(56) Documents Cited

GB 2077508 A	GB 2013401 A	GB 2000375 A
GB 1552639 A	GB 1249669 A	GB 1209564 A
GB 0407184 A	GB 0392936 A	GB 0342157 A
GB 0302093 A	WO 84/00845 A1	

(58) Field of Search
UK CL (Edition Q) H1N NUJD
INT CL⁶ H01H

(54) Abstract Title
Switch for use in an advertising appliance

(57) An advertising appliance generates an information signal for advertising goods or services or for communicating customer information. The advertising appliance comprises a switch which can be adhered to a floor such as to be substantially planar with the floor. The switch is operated by applying pressure to it. e.g. by stepping on it. Thereby, signal generation means are activated which generate the information signal. Conductive lines 10, 14 comprised of conductive ink are separated by insulating strips 11 and 12.

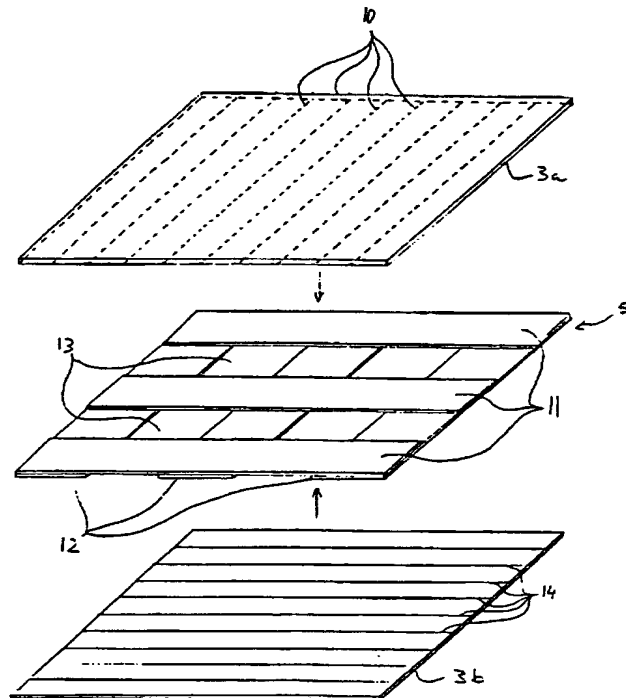


Fig. 2

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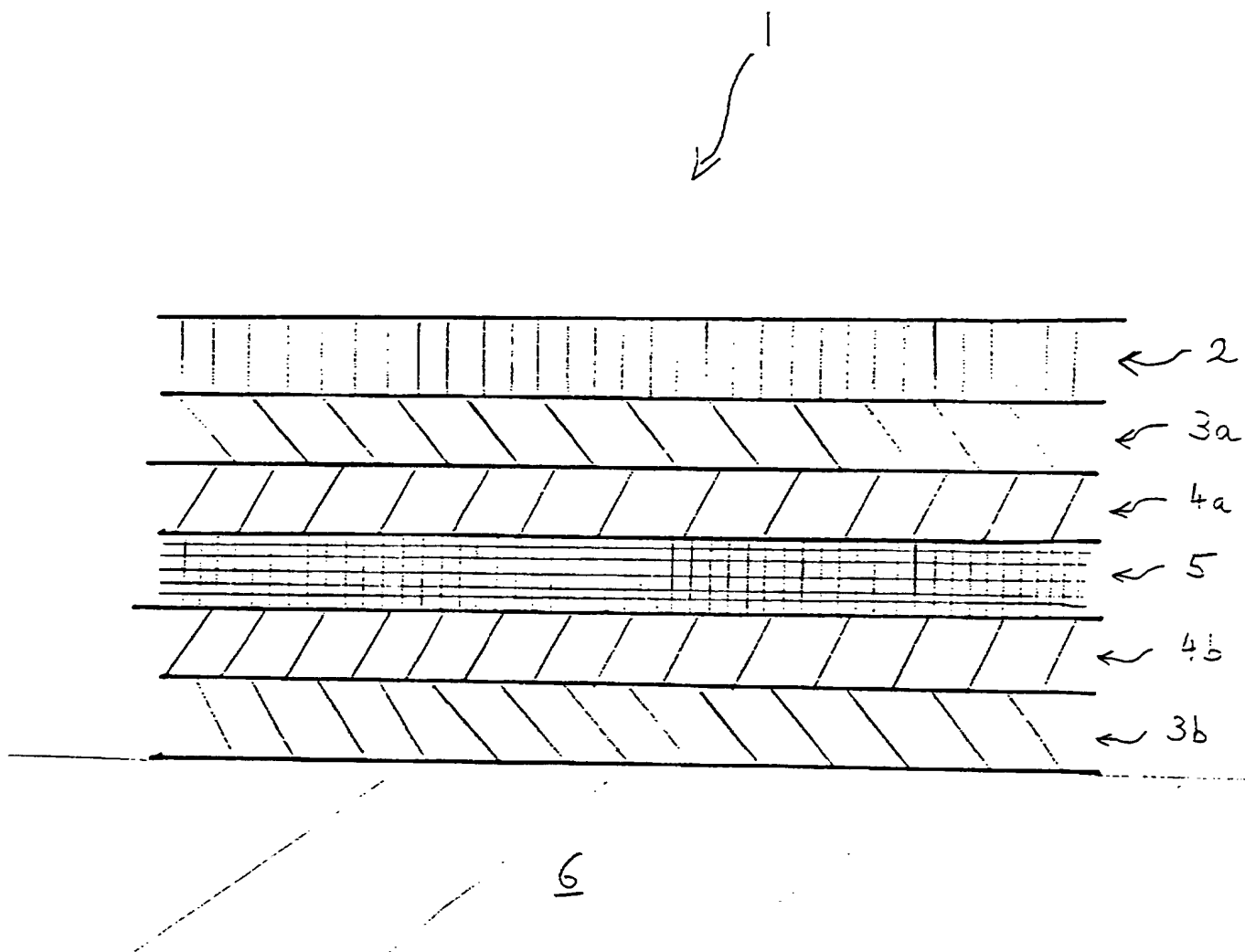


Fig. 1

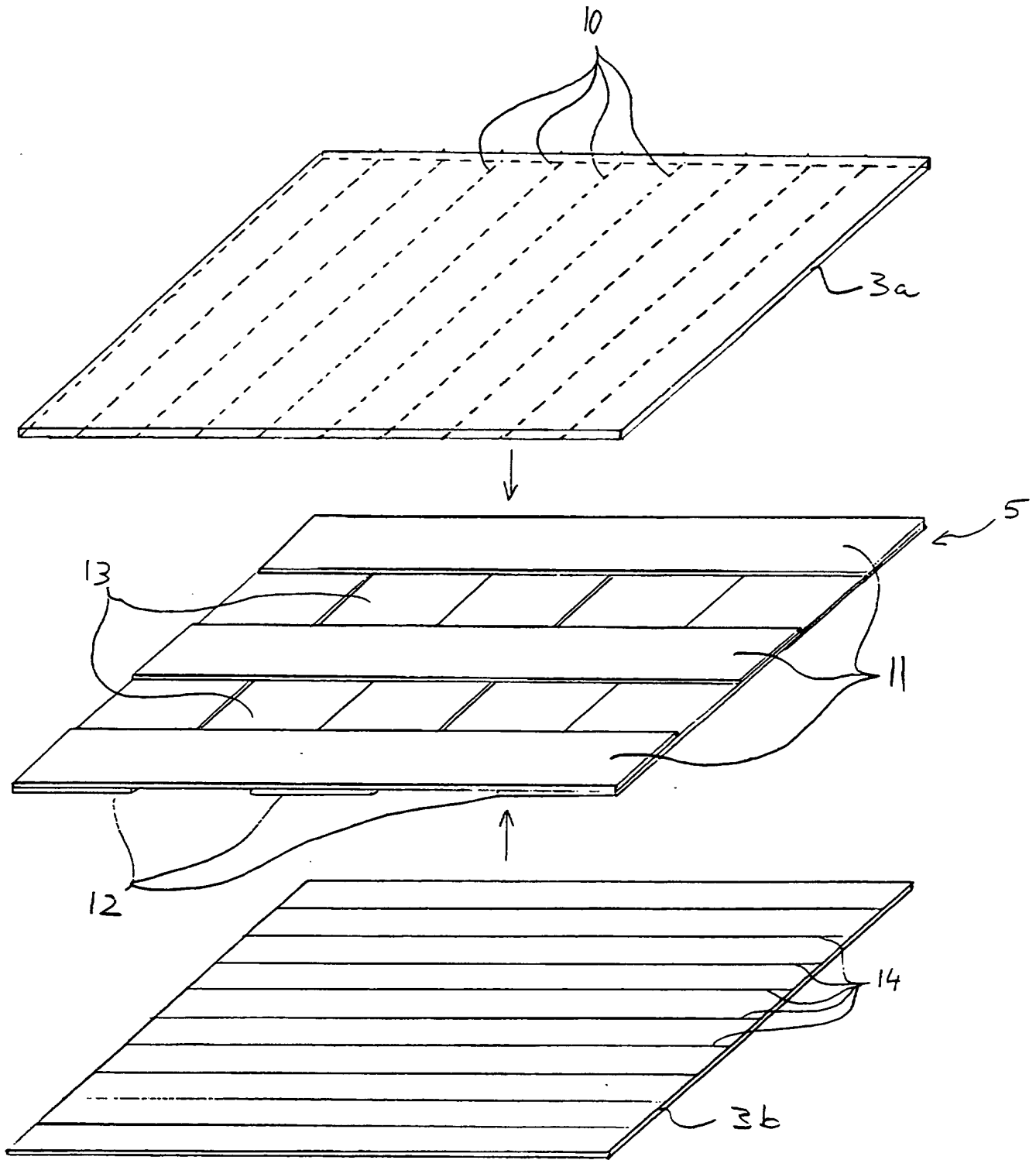


Fig. 2

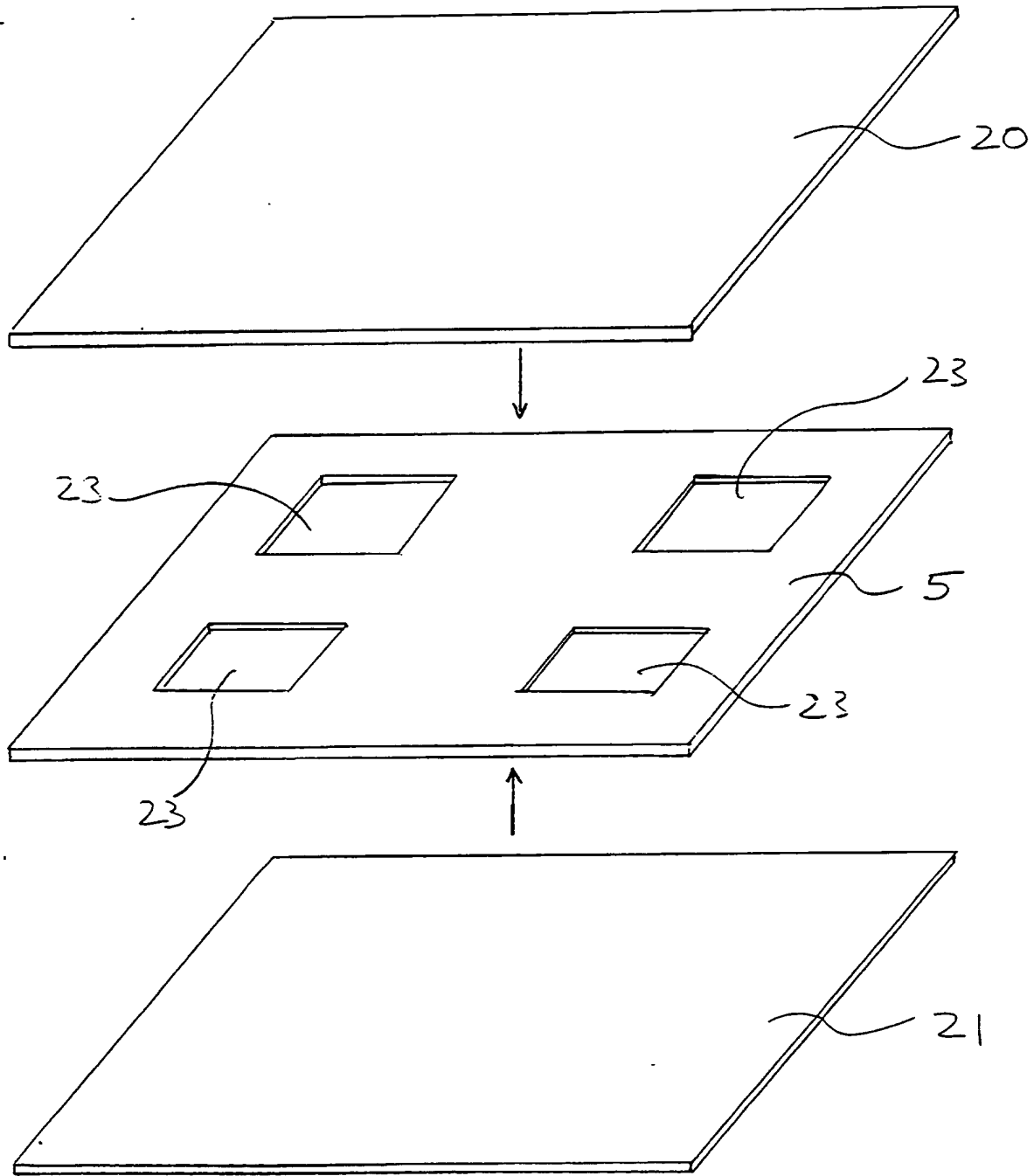


Fig. 3

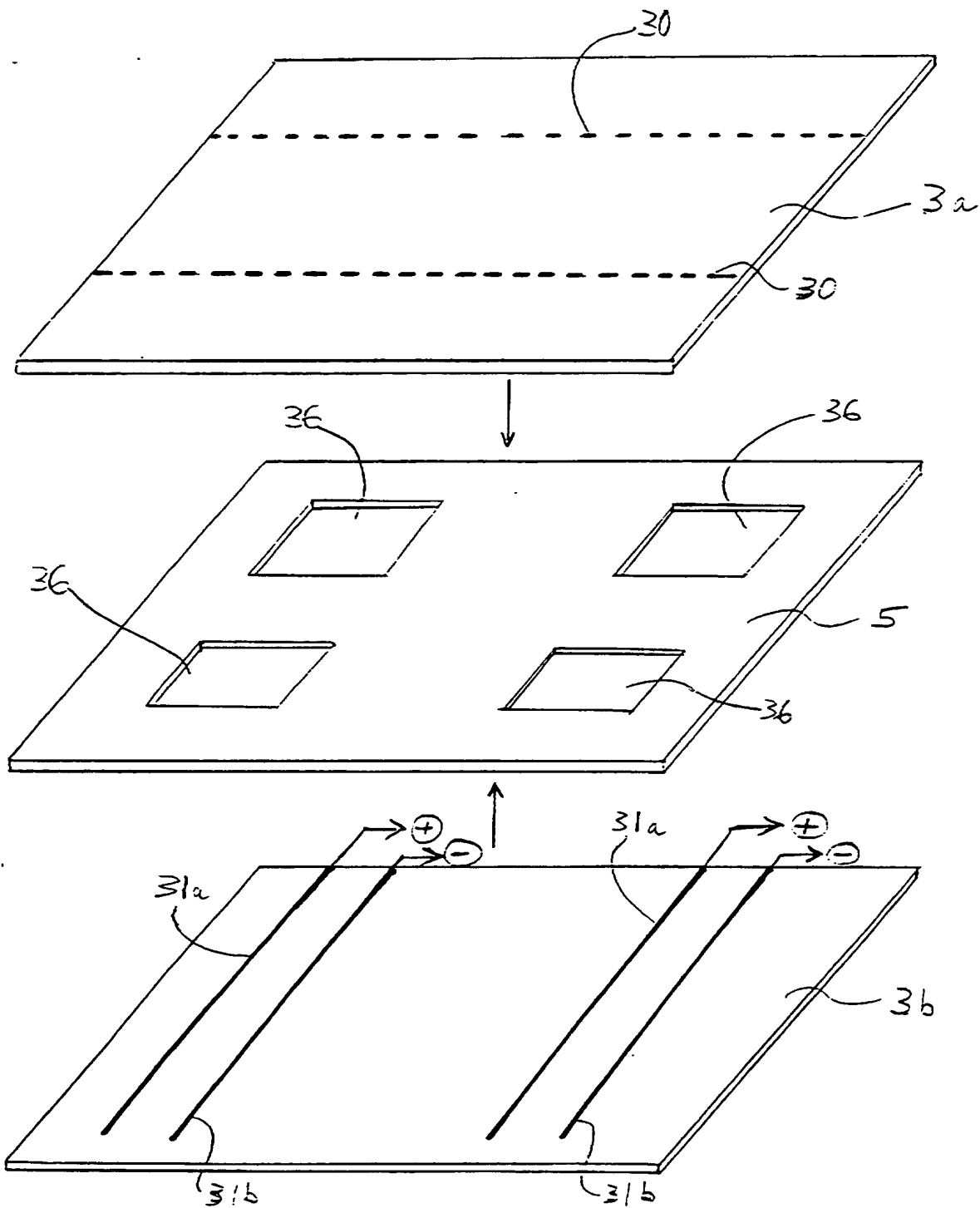


Fig. 4

SWITCH FOR USE IN AN ADVERTISING APPLIANCE

The invention relates to a switch for use in an advertising appliance.

Background of the Invention

5 In times of increasing diversity of available goods and services, advertisers find it more and more difficult to attract a customer's attention for a particular product. For example, when shopping, a customer is exposed to various advertisements (mostly in the form of printed signs or placards) trying to draw the customer's attention to a new or special offer, etc. Due to the
10 sometimes immense number of such advertisements, however, the customer tends to ignore or even to get annoyed by them.

Accordingly it is desirable to provide an improved way of communicating advertisements and/or customer information.

Summary of the Invention

15 According to one aspect of the invention, there is provided a switch for use in an advertising appliance, the switch being attachable by one of its surfaces to a floor such as to be substantially planar with the floor, wherein the opposite surface of the switch is provided with a graphic representative of customer or advertising information, the switch being connectable to a signal
20 generation circuit and operable by pressure to operate the signal generation circuit.

The switch may be attached, for example, to the floor in the entrance area of a shop. Since the switch is substantially planar with the floor, the switch may be simply adhered to the floor without requiring any adaptation of the floor. The graphic provided on the switch's surface is intended to attract a customer's attention. When stepping on the switch and thereby applying a pressure thereon, the switch is operated to activate the signal generation circuit connected to it. The signal generation circuit then generates a signal intended to communicate customer information or an advertisement to the customer who has stepped on the switch. For example, the signal generator may play a tune or announce a special or new offer. It may also produce light effects, project a slide to a wall, illuminate a product shelf, etc. Accordingly, the switch provides an attractive way of conveying customer or advertising information to a customer.

Preferably, the switch comprises a graphic layer provided with the graphic; first and second conductor layers; and an insulating layer separating the first and second conductor layers, the insulating layer being provided with at least one aperture; wherein the first and second conductor layers are sufficiently resilient such that they can be brought in contact with one another through the at least one aperture in the insulating layer by applying pressure onto the switch, thereby operating the switch. The first and second conductors are separated from one another due to their resilience once the pressure is released. In one embodiment, the insulating layer may be formed

by a sheet of paper or cardboard, while the first and second conductor layers may be formed by metal foils. This allows an inexpensive manufacture of the switch.

In another embodiment, the first conductor layer is formed by one or
5 more conductors provided on an insulating surface, and the second conductor layer is formed by first and second conductors provided on another insulating surface, the first and second conductors being electrically separated from one another, wherein the one or more conductors of the first conductor layer can be brought into contact with the first and second conductors of the second
10 conductor layer through the at least one aperture of the insulating layer by applying pressure onto the switch such that the one or more conductors simultaneously contact the first and second conductors. The first and second conductors may be connected to different poles of the signal generator. When pressure is applied to the switch, the conductors of the first conductor layer
15 are brought into contact with both the first and second conductors on the second conductor layer, thus short-circuiting them and closing the signal generation circuit. When the pressure is released, the conductors of the first conductor layer are separated from the first and second conductors of the second conductor layer, thereby opening the signal generation circuit.

20 Preferably, the switch comprises an adhesive bottom layer adherable to the floor.

In an alternative embodiment, the switch may comprise a first polyester layer provided in-between the graphic layer and the first conductor layer, the graphic layer being adhered to the first polyester layer; and a second polyester layer provided on the surface of the second conductor layer opposite the insulating layer, the second polyester layer being provided with an adhesive to allow the switch to be adhered onto the floor. The first and second conductor layers may comprise lines of conductive ink provided on the first and second polyester layers. The insulating layer may be formed by strips of insulating spacer tape adhered to one another and to the first and second polyester layers. Such design allows the switch to be easily and inexpensively manufactured and to be very thin.

The graphic layer may comprise polycarbonate and may be printed with the graphic. The graphic layer also may comprise an illuminating material.

The graphic layer may have a surface area larger than that of the conductor and insulating layers. Thereby, material expenses are reduced. However, the graphic area may as well have the same surface area as the conductor and insulating layers. This guarantees a uniform thickness of the switch over its entire extent.

Preferably, the switch is included in a signal generation circuit for generating an information signal, the information signal being intended for communicating advertising or customer information. The signal may be an

acoustic signal generated by a sound chip. Alternatively, the signal may be a visible signal generated by a light unit, such as a slide projector.

The signal generation circuit may comprise a power supply having first and second poles, the first pole being connected to one of the first and second conductor layers, and the second pole being connected to the other of the first and second conductor layers. Thus, when operating the switch by applying pressure, the first and second conductor layers contact each other, thus closing the signal generation circuit. In the alternative embodiment of the switch, where the second conductor layer comprises first and second conductors, while the first conductor layer comprises a conductor for short-circuiting the first and second conductors on operation of the switch, the first pole of the signal generation circuit is connected to the first conductor, while the second pole is connected to the second conductor.

According to another aspect of the invention there is provided an advertising appliance, comprising: switch means attachable by one of its surfaces to a floor such as to be substantially planar with the floor, and being operable by pressure; signal generation means connected to and operable by the switch means, the signal generation means being arranged to generate an information signal intended for communicating advertising and customer information.

The generated signal may be an acoustic signal generated, for example, by a sound chip. However, it may as well be a visible signal, generated by a light unit.

Brief Description of the Drawings

5 Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a sectional view of the switch according to an embodiment of the invention;

Figure 2 shows a schematic view of a first embodiment of the conductor
10 and insulating layers;

Figure 3 shows a schematic view of a second embodiment of the conductor and insulating layers; and

Figure 4 show a schematic view of a third embodiment of the conductor and insulating layers.

15 Detailed Description of the Drawings

Referring to Figure 1, a sectional view of a switch for use in an advertising appliance according to an embodiment of the invention is shown. The switch will be referred to as "floorsticker" in the following. Floorsticker 1 comprises several layers: a graphic layer 2, first and second polyester layers 3a and 3b, first and second conductor layers 4a and 4b, and an insulating layer 5. Layers 3a, 3b, 4a, 4b, and 5 will be referred to as "membrane switch" in the following.

The bottom side of second polyester layer 3b is provided with an adhesive in order to allow adhesion of floorsticker 1 to floor 6. For delivery, the adhesive is covered by a release paper (not shown) which is released prior to adhesion to floor 6.

5 Graphic layer 2 is a layer printed from underneath with a desired graphic. Layer 2 may be made, for example, of polycarbonate. The graphic may represent any kind of customer or advertising information, such as for example the logo and/or name of a shop in which the floorsticker 1 is to be used. It may also represent information about a specific product or a special
10 offer.

Graphic layer 2 is adhered to first polyester layer 3a. First polyester layer 3a serves as a protection layer for first conductor layer 4a. Polyester layer 3a may be transparent and fixed to first conductor layer 4a, for example, by an adhesive.

15 The membrane switch comprising first and second conductor layers 4a and 4b with insulating layer 5 inbetween may be embodied in various ways as will be described in connection with Figures 2 to 4. All embodiments have in common that insulating layer 5 separates first and second conductor layers 4a, 4b unless a pressure is applied from above on the floorsticker 1, for example
20 by someone stepping on it. Conductor layers 4a, 4b are sufficiently resilient to move towards and contact one another through apertures in the insulating layer 5.

When in contact with one another, a signal generation circuit (not shown) connected to the conductor layers 4a, 4b is closed (this will be explained in more detail in connection with Figures 2 to 4). Such circuit may comprise means for generating various signals, such as a sound chip, a light unit, a slide projector, etc. Accordingly, when the circuit is closed by conductor layers 4a, 4b contacting each other, such signal generation means are activated.

One possible application of floorsticker 1 is in the entrance area of a shop. A customer entering the shop and stepping on the floorsticker thereby closes the signal generation circuit connected to the floorsticker. Thus, the signal generation circuit is activated and communicates an information signal to the customer, for example by playing a tune, playing a message about a specific product or a special offer, activating a light unit, projecting a slide etc. Another possible application is to locate floorsticker 1 in the proximity of a shelf in the shop. The customer, when stepping on the floorsticker, is then provided with information about specific products stored on that shelf, or a light unit illuminating these products is activated. Many alternative applications are possible.

Referring now to Figure 2, a first embodiment of the membrane switch consisting of layers 4a, 4b and 5 is illustrated. First conductor layer 4a is embodied by parallel first conductive lines 10 (shown as dotted lines) being provided at a predetermined distance from one another on the bottom surface

of polyester layer 3a. Conductive lines 10 are formed by lines of a conductive ink. Conductive lines 10 are connected to one pole of the signal generation circuit (not shown) as described above. Insulating layer 5 of Figure 1 is embodied by strips 11 and 12 of insulating spacer tape. Strips 11 run parallel
5 to each other, as do strips 12. Strips 11 and 12 are arranged perpendicularly relative to each other. Apertures 13 are formed in-between strips 11 and 12. Strips 11 and 12 are adhered to each other as well as to the first and second polyester layers 3a and 3b, respectively, as indicated by the arrows.

Second conductive lines 14 are provided perpendicularly to first
10 conductive lines 10 on the top of polyester layer 3b. Conductive lines 14 embody the second conductor layer 4b of Figure 1 and are manufactured by providing lines of conductive ink on the top of second polyester layer 3b. Conductive lines 14 are connected to another pole of the signal generation circuit (not shown).

15 When pressure is applied from above onto the floorsticker incorporating the layers illustrated in Figure 2, for example by someone stepping on the floorsticker, due to the resilience of at least the first polyester layer 3a, conductive lines 10 are moved towards conductive lines 14 through apertures 13 to contact them and thereby to close the associated circuit, thus activating a
20 signal generation as set out above. When the pressure is released, polyester layer 3a resiles back into its original shape, thus separating conductive lines 10 and 14 from each other and opening the signal generation circuit.

Referring now to Figure 3, a second embodiment of the membrane switch is illustrated. Layers 4a, 4b and 5 of Figure 1 are embodied by metal foils 20, 21 and a paper sheet 22, respectively. Metal foils 20, 21 are connected to respective poles of the signal generation circuit. Foils 20, 21 and 22 may be glued to one another. In this embodiment, polyester layers 3a and 3b of Figure 1 are not required. Rather, graphic layer 2 may be adhered directly to metal foil 20 while the bottom surface of metal foil 21 may be adhered directly to the floor. However, polyester layers 3a, 3b may as well be retained as protective layers.

Insulating layer 5 is formed by a paper sheet 22 comprising apertures 23. Metal foil 20 is sufficiently resilient such that in use, when pressure is applied to the metal foil 20, an electrical contact between metal foils 20 and 21 is established through one or more of the apertures 23, similar to the operation of the first embodiment. The circuit connected to metal foils 20, 21 is thereby closed. The metal foil 20 moves back into its starting position when the pressure is released.

Referring to Figure 4, a third embodiment of the membrane switch is illustrated. Similar to the first embodiment first conductive lines 30 (shown as dotted lines) are provided on the bottom of first polyester layer 3a. Conductive lines 30 may be formed by conductive ink. Second conductive lines 31 are provided on the top of second polyester layer 3b. Again, second conductive lines may be formed by conductive ink. First and second

conductive lines 30, 31a and 31b embody the first and second conductor layers 4a and 4b of Figure 1. Between first and second polyester layers 3a and 3b, insulating layer 5 having apertures 36 is provided. Insulating layer 5 can be formed by paper (as in the second embodiment) or spacer tape (as in the first embodiment). Layers 3a, 3b and 5 may be glued to one another. The main difference between this embodiment and the first embodiment of the membrane switch is that conductive lines 31a and 31b on layer 3b are connected to different poles of the application circuit. Lines 31a are connected to the plus-pole, while lines 31b are connected to the minus-pole of the circuit. Lines 30 on polyester sheet 3a are not connected to the circuit but merely serve as shorting lines. In contrast, in the first embodiment, conductive lines 10 and 14 connected to the different poles of the circuit are provided on sheets 3a and 3b, respectively.

In use, shorting lines 30 are movable through apertures 36 to contact simultaneously conductive lines 31a and 31b by applying pressure onto the membrane switch, thereby closing the circuit. When the pressure is released, shorting lines 30 are separated from conductive lines 31a, 31b.

It is to be noted that the floorsticker is not limited to the above embodiments. The floorsticker can be provided in any desired shape and size. If the floorsticker extends over a large area, it may comprise a plurality of membrane switches, each membrane switch being connected to a different

signal generation circuit. Thus, depending on which part of the floorsticker is subjected to pressure, different signal generators are activated.

It should be noted that the present invention is not limited to the embodiments as described above. It is envisaged that various modifications
5 and variations to the above described embodiments could be made without falling outside the scope of the invention as defined in the claims.

CLAIMS:

1. A switch for use in an advertising appliance, the switch being attachable by one of its surfaces to a floor such as to be substantially planar with the floor, wherein the opposite surface of the switch is provided with a graphic representative of advertising or customer information, the switch being connectable to a signal generation circuit and operable by pressure to operate the signal generation circuit.
2. The switch of claim 1, comprising:
a graphic layer provided with the graphic;
first and second conductor layers; and
an insulating layer separating the first and second conductor layers, the insulating layer being provided with at least one aperture;
wherein the first and second conductor layers are sufficiently resilient such that they can be brought in contact with one another through the at least one aperture in the insulating layer by applying pressure onto the switch, thereby operating the switch.
3. The switch of claim 2, wherein the insulating layer is formed by a sheet of paper or cardboard.

4. The switch of claim 2 or 3, wherein the first and second conductor layers are formed by metal foils.
5. The switch of claim 2 or 3, wherein the first conductor layer is formed
5 by one or more conductors provided on an insulating surface, and the second conductor layer is formed by first and second conductors provided on another insulating surface, the first and second conductors being electrically separated from one another, wherein the one or more conductors of the first conductor layer can be brought into contact with the first and second conductors of the
10 second conductor layer through the at least one aperture of the insulating layer by applying pressure onto the switch such that the one or more conductors simultaneously contact the first and second conductors.
6. The switch of any of claims 2 to 5, further comprising an adhesive
15 bottom layer adherable to the floor.
7. The switch of claim 2, further comprising:
a first polyester layer provided inbetween the graphic layer and the first conductor layer, the graphic layer being adhered to the first polyester layer;
20 and

a second polyester layer provided on the surface of the second conductor layer opposite the insulating layer, the second polyester layer being provided with an adhesive to allow the switch to be adhered onto the floor.

5 8. The switch of claim 7, wherein the first and second conductor layers comprise lines of conductive ink provided on the first and second polyester layers.

10 9. The switch of claim 7 or 8, wherein the insulating layer is formed by strips of insulating spacer tape adhered to one another and to the first and second polyester layers.

10. The switch of any of claims 2 to 9, wherein the graphic layer comprises polycarbonate.

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11. The switch of any of claims 2 to 10, wherein the graphic layer is printed with the graphic.

12. The switch of any of claims 2 to 11, wherein the graphic layer
20 comprises an illuminating material.

13. The switch of any of claims 2 to 12, wherein the graphic layer has a surface area larger than that of the conductor and insulating layers.

14. The switch of any of claims 2 to 12, wherein the graphic layer has
5 substantially the same surface area as the conductor and insulating layers.

15. A signal generation circuit, for generating an information signal, in combination with the switch of any preceding claim, the information signal being intended for communicating advertising or customer information.

10

16. The combination of claim 15, wherein the signal is an acoustic signal.

17. The combination of claim 16, wherein a sound chip is provided in said signal generation circuit for generating the acoustic signal.

15

18. The combination of claim 15, wherein the signal is a visible signal.

19. The combination of claim 18, wherein a light unit is provided in said signal generation circuit for generating the visible signal.

20

20. The combination of claim 19, wherein the light unit comprises a slide projector.

21. The combination of any of claims 15 to 20, further comprising a power supply arranged to be activated when the switch is operated.

5 22. An advertising appliance, comprising:

switch means attachable by one of its surfaces to a floor such as to be substantially planar with the floor, and being operable by pressure; and

signal generation means connected to and operable by the switch means, the signal generation means being arranged to generate an information signal
10 intended for communicating advertising or customer information.

23. The advertising appliance of claim 22, wherein the information signal is an acoustic signal.

15 24. The advertising appliance of claim 23, further comprising a sound chip for generating the acoustic signal.

25. The advertising appliance of claim 22, wherein the information signal is a visible signal.

20

26. The advertising appliance of claim 25, further comprising a light unit for generating the visible signal.

27. An advertising appliance, comprising:

a switch substantially as herein described with reference to Figures 1 to 4; and

5 signal generation means connected to and operable by the switch, the signal generation means being arranged to generate an information signal intended for communicating advertising or customer information.



Application No: GB 9902888.8
Claims searched: 1-27

Examiner: Vaughan Phillips
Date of search: 24 September 1999

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): H1N (NUJD)

Int Cl (Ed.6): H01H

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X Y	WO 84/00845 A1 (PRESS ON) see p.1 lines 9-14	1 at least 15
X Y	GB 2077508 A (WEATHERLEY) see indicia, Fig. 3	1 at least 15
X Y	GB 2013401 A (BRADY) see p.1 lines 100-106	1 at least 15
X Y	GB 2000375 A (CORNELIUS) see indicia, Fig. 6	1 at least 15
X Y	GB 1552639 (GLOBE-UNION) see indicia, Fig. 1	1 at least 15
X Y	GB 1249669 (BROCKS) see p.1 lines 75-81	22 at least 15
X Y	GB 1209564 (AUTO SLIDING DOOR) see p.1 lines 9-15	22 at least 15
X Y	GB 0407184 (NATIONAL PNEUMATIC) see p.1 lines 12-15	22 at least 15

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.



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Application No: GB 9902888.8
Claims searched: 1-27

Examiner: Vaughan Phillips
Date of search: 24 September 1999

Category	Identity of document and relevant passage	Relevant to claims
X Y	GB 0392936 (PEARSON) see p.2 lines 76-93	22 at least 15
X Y	GB 0342157 (RADO) see whole document	22 at least 15
X Y	GB 0302093 (KALIKOW) see whole document	22 at least 15

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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